

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Patent Application No. 08/939,442

REMARKS

Reconsideration and allowance of the subject application are respectfully requested. By this Amendment, Applicant has added new claims 69-91. Thus, claims 1-91 are now pending in the application. In response to the Office Action (Paper No. 30), Applicant respectfully submits that the pending claims define patentable subject matter.

Claims 1-8, 10-12, 17, 20, 21-24, 26-35, 39-41, 43, 45, 48-50, 53, 56, 57-60 and 62-68 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Saib (USP 6,097,878) in view of Yuen et al. (USP 6,430,359; hereafter “Yuen ‘359”). Claims 18, 19, 54 and 55 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Saib in view of Yuen ‘359 and Fujii et al. (USP 5,966,385; hereafter “Fujii”). Claims 25, 36-38, 44 and 61 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Saib in view of Yuen ‘359 and Yuen et al. (USP 5,488,409; hereafter “Yuen ‘409”). Claims 13-16, 46, 47, 51 and 52 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form. Applicant respectfully traverses the prior art rejections for the reasons set forth bel

Disclosure of Saib

As shown in Figure 3, Saib discloses a home entertainment system 300 which includes an antenna 305, an integrated receiver decoder (IRD) 310, and at least one analog-input peripheral device such as a display monitor or television receiver 320 and/or an analog recording device 330 such as a video cassette recorder (VCR). A digital bit stream including sensory data (e.g., video and/or audio, or communication data), and control information including programming

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data (e.g., show title, date of broadcast, broadcast channel number, show start-time, show end-time, etc.) is provided from the antenna 305 to the IRD 310. The bit stream is decoded and processed by the IRD 310 to produce one or more output signals having appropriate formats. An output signal is placed in an analog video format and sent via communication line 325 to the TV 320 for viewing, and/or via communication line 335 to the VCR 330 for recording.

Additionally, the IRD 310 is responsible for responding to a plurality of commands from a remote control 315. A first command which causes the IRD 310 to produce an output signal displaying an electronic guide screen on TV 320. A second command causes (a) the IRD 310 to tune to the broadcast channel of that show if a cursor is positioned over the grid of a current-broadcast show, or (b) a screen menu to be displayed in combination with the electronic guide screen if the cursor is positioned over the grid of a future-broadcast show. Upon scrolling the cursor to be position above a selected option and initiating a third command from the remote control 315, programming data associated with the future-broadcast show (i.e., a title of the future broadcast show, a start-time of the future-broadcast show, an end-time of the future-broadcast show, a date of broadcast of the future-broadcast show and a broadcast channel number) is stored in the IRD 310. Based on the stored programming data, the IRD 310 will automatically tune to the future-broadcast show at the appropriate future time so that the VCR 330 may record the future-broadcast show as received from the IRD 310.

As shown in Figure 4, Saib also teaches that the IRD 310 may be connected to digital peripheral devices (such as digital VCRs, digital video disk players, and digital laser disk players which are not shown) though an interface (IF) 415 which includes a link layer integrated circuit

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(IC) and a physical layer IC (not shown) and complies with the IEEE standards document 1394 (hereinafter referred to as "IEEE 1394"). The digital-input peripheral devices supply control signals (e.g., IEEE 1394 commands) to a central processing unit (CPU) within main logic block 410 (see FIG. 5) of the IRD 310 through IF 415 and extension bus 420. Audio and video data is transferred from the digital-input peripheral devices to main logic block 410 through an IEEE 1394 serial bus 425. From the CPU, IEEE 1394 commands may be transferred to the digital-input peripheral devices via extension bus 420 and IF 415. See column 4, lines 28-44.

Disclosure of Yuen '359

Yuen '359 discloses an apparatus and method using compressed codes for TV program record scheduling. Encoded video recorder/player timer preprogramming information listed in a television calendar allows a timer preprogramming feature on a video cassette recorder VCR to be programmed using a compressed code (G-code) which is decoded by a G-code decoder built into a remote control, video cassette recorder, television or other video device to convert the compressed code into channel, date, time and length (CDTL) information. The compressed G-code indications associated with each television program can be printed in a television program calendar in advance. The user can use the remote control or controls on the video device to enter the code that signifies the program to be recorded. The CDTL information is used to select channels, start recording, and stop recording at the appropriate time. A local channel map is stored so that the channel information from the compressed codes can be utilized to tune the correct channel even though channel numbers in different localities may be different. The

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remote may be a universal remote control capable of selecting between various stored command protocols for commanding different brands and model of video devices. Both entering local channel map data and selecting proper remote control command protocols may be accomplished by a keyboard connected to the remote control or other video device or by an external device, including external devices that accomplish this entering and selecting by transmitting over telephone lines.

Independent claim 1

Amended independent claim 1 recites “a receiver including a first digital interface, for generating a control command based on the program information received from said input device, and for transferring the control command and a multi-program transport stream via said first digital interface.” Claim 1 further recites “a recording/reproducing device including a second digital interface, for decoding the control command transferred from said receiver, and for recording/reproducing the multi-program transport stream transferred from said receiver, corresponding to the program information obtained by decoding the received control command.”

The Examiner contends that Saib discloses all of the features of the claimed invention except for a receiver for generating a control command based on the program information received from the input device, and for transferring the control command to a recording/reproducing device for decoding the control command transferred from the receiver and for recording/reproducing a multi-program transport stream being received, corresponding to the program information obtained by decoding the received command. However, the Examiner

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alleges that Yuen '359 discloses these features via the G-code transmitted from a remote controller to the G-code decoder implemented in a receiver, VCR or television. In particular, the Examiner asserts that the claimed program information control command reads on the G-code and the claimed receiver reads on the devices with the G-code decoder. Further, the Examiner asserts that “[i]t would have been obvious to modify Saib by adding a G-code switch to the remote controller of Saib, as taught by Yuen, and also adding a G-code decoder to another device, e.g., the IRD of Saib, in order that the remote controller with the G-code would send a command control information (G-code CDTL) to the IRD receiver 310 to tune into the correct channel and the starting and stopping the recording function of the VCR 330 of Saib.”

Applicant respectfully submits that claim 1 would not have been rendered obvious in view of Saib and Yuen '359 because the cited references do not teach or suggest transferring a multi-program transport stream from the receiver to the recording/reproducing device or a recording/reproducing device for recording/reproducing a multi-program transport stream. In particular, Saib teaches that the IRD 310 decodes and processes a received bit stream and transmits an (analog) signal corresponding to a desired broadcast channel to the VCR 330 and/or TV 320. That is, the front-end unit 400 of the IRD 310 includes a tuner for tuning to a desired broadcast channel and a demodulator 405 and CPU 410 which receive and processes the bit stream associated with the desired broadcast channel. Saib also teaches that the IRD 310 may be connected to digital-input peripheral devices (such as digital VCRs, digital video disk players, and digital laser disk players which are not shown) though an interface (IF) 415 which includes a link layer integrated circuit (IC) and a physical layer IC (not shown) and complies IEEE 1394.

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However, Saib teaches that the IRD 310 receives audio and video data from the digital-input peripheral device (i.e., the IRD does not output a multi-program transport stream to the digital-input peripheral devices).

Although Yuen '359 discloses transmitting channel, date, time and length (CDTL) information from a remote controller to a receiver (e.g., television 950 in Fig. 29) and transmitting the received CDTL information from the receiver to a recording/reproducing device (e.g., VCR 964 in Fig. 29), Yuen '359 does not teach or suggest transferring from a receiver to a recording/reproducing device a multi-program transport stream, and recording/reproducing a multi-program transport stream being received (from the receiver), corresponding to the program information obtained by decoding the received command. Further, Yuen '359 teaches that when the G-code decoder is incorporated in a cable box, satellite receiver, VCR or TV, the CDTL information is transferred to other devices via infrared transmitters rather than cable links used for transmitting audio and video data between the devices.

Accordingly, Applicant respectfully submits that claims 1 and 2 should be allowable over Saib and Yuen '359 because the cited references do not teach or suggest all of the features of the claims.

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Independent claim 3

Independent claim 3 recites a “receiver comprising … a first digital interface for … generating a program information control command based on the program information of the intended program, and transmitting the multi-program transport stream provided by said first signal processor and the program information control command.” Claim 3 further recites “[a] recording/reproducing device comprising a second digital interface for receiving the program information control command and the multi-program transport stream from said from said first digital interface and decoding the program information control command to obtain the program information of the intended program; and a second signal processor for extracting the intended program from the multi-program transport stream received by said second digital interface, based on the program information”.

Similar to claim 1, Applicant respectfully submits that neither Saib nor Yuen ‘359 teach or suggest transferring a multi-program transport stream from the receiver to the recording/reproducing device, as required by claim 3.

Accordingly, Applicant respectfully submits that claims 3-21 should be allowable over Saib and Yuen ‘359 because the cited references do not teach or suggest all of the features of the claims.

Independent claims 22, 26 and 30

Independent claim 22 recites “[a] method for transferring and receiving program information between a receiver with a digital interface for receiving a multi-program transport

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stream and a recording/reproducing device with a digital interface for recording/reproducing the multi-program transport stream on/from a recording medium.” Claim 26 recites “[a] method for transferring program information between a receiver with a digital interface for receiving a multi-program transport stream and a recording device with a digital interface for recording the multi-program transport stream on a recording medium.” Claim 30 recites “[a] method for receiving program information by a receiver with a digital interface for receiving a multi-program transport stream and a reproducing device with a digital interface for reproducing the multi-program transport stream of the program recorded on a recording medium.” Further, claims 22, 26 and 30 have been amended to improve clarity by reciting the multi-program transport stream is transferred between the digital interface of the receiver and the digital interface of the recording/reproducing device.

Similar to claim 1, Applicant respectfully submits that neither Saib nor Yuen ‘359 teach or suggest recording/reproducing the multi-program transport stream on/from a recording medium, as required by the claims.

Accordingly, Applicant respectfully submits that claims 22-30 should be allowable over Saib and Yuen ‘359 because the cited references do not teach or suggest all of the features of the claims.

Independent claim 31

Independent claim 31 is directed to a digital audio/video device. Claim 31 requires “a receiver having a digital interface, for receiving a multi-program transport stream and generating

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a program information control command based on program information received from a user, and *for transferring the control command and the multiprogram transport stream via the digital interface.*"

Applicant respectfully submits that claim 31 should be allowable because Saib and Yuen '359 do not teach or suggest transferring the control command and the multi-program transport stream via the digital interface, as required by claim 31. Rather, Saib discloses that the remote control 315 generates a command which causes the IRD 310 to store programming data of a future-broadcast show so that IRD 310 can tune the future-broadcast show at the appropriate date and time in order to output the analog and video data of the future-broadcast show to the analog VCR 330 for recording. Further, the IRD 310 does not transfer any commands to the VCR 330 (or digital peripheral devices) based on the command from the remote control 315.

Yuen '359 teaches that when the G-code decoder is incorporated in a cable box, satellite receiver, VCR or TV, the CDTL information is transferred via infrared transmitters. Therefore, even if the G-code decoder is incorporated in the IRD of Saib, the IRD would transmit the CDTL information received from the remote control 315 to VCR 330 via an infrared transmitter, and transmit an analog signal corresponding to a desired broadcast channel (i.e., not a multi-program transport stream) to the VCR 330 via communication line 335.

Accordingly, Applicant respectfully submits that claims 31-33 should be allowable over Saib and Yuen '359 because the cited references do not teach or suggest all of the features of the claims.

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Independent claim 34

Independent claim 34 is directed to a digital audio/video recording/reproducing device.

Claim 34 requires “a receiver including a digital interface for *receiving a multi-program transport stream* and a control command transferred from a digital audio/video (A/V) device, *decoding the control command and recording/reproducing the multi-program transport stream corresponding to program information of the transport stream obtained by decoding the received control command.*”

Similar to claim 1, Applicant respectfully submits that Saib and Yuen ‘359 do not teach or suggest a recording/reproducing device which receives a multi-program transport stream and records/reproduces the multi-program transport stream corresponding to program information of the transport stream obtained by decoding the received control command.

Accordingly, Applicant respectfully submits that claim 34 should be allowable over Saib and Yuen ‘359 because the cited references do not teach or suggest all of the features of the claimed invention.

Independent claim 35

Independent claim 35 is directed to a digital audio/video device having a receiver for receiving a multi-program transport stream. Claim 35 recites “the receiver comprises ... a digital interface for generating a program information control command based on program information input by a user, and *transferring a multi-program transport stream output from the signal processor and the control command.*”

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Similar to claim 1, Applicant respectfully submits that Saib and Yuen '359 do not teach or suggest a receiver transferring a multi-program transport stream and the control command via a digital interface.

Accordingly, Applicant respectfully submits that claims 35-47 should be allowable over Saib and Yuen '359 because the cited references do not teach or suggest all of the features of the claimed invention.

Independent claim 48

Independent claim 48 is directed to a digital audio/video (A/V) recording/reproducing device for recording/reproducing a multi-program transport stream transferred from a digital A/V device. Claim 48 requires:

a digital interface for decoding a program information command transferred from the digital A/V device and for receiving the multi-program transport stream being transferred from the digital A/V device; and

a signal processor for extracting an intended program from the multi-program transport stream received by the digital interface, based on the program information, and for recording the extracted result on recording media during a recording mode, and for outputting a reproduced transport stream to the digital interface during a playback mode.

Similar to claim 1, Applicant respectfully submits that Saib and Yuen '359 do not teach or suggest a recording/reproducing device which receives a multi-program transport stream,

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extracts an intended program from the multi-program transport stream based on the program information, records the extracted result on recording media during a recording mode, and outputs a reproduced transport stream to the digital interface during a playback mode.

Accordingly, Applicant respectfully submits that claims 48-57 should be allowable over Saib and Yuen '359 because the cited references do not teach or suggest all of the features of the claimed invention.

Independent Claims 58, 62 and 67

Independent claim 58 is directed to a method for transferring and receiving program information between a receiver with a digital interface for receiving a multi-program transport stream and a recording/ reproducing device with a digital interface for recording/reproducing the multi-program transport stream on/from a recording medium. Independent claim 62 is directed to a method for transferring program information between a receiver with a digital interface for receiving a multi-program transport stream and a recording and reproducing device with a digital interface for recording the multi-program transport stream on a recording medium. Independent claim 67 is directed to a method for receiving program information by a receiver with a digital interface for receiving a multi-program transport stream and a reproducing device with a digital interface for reproducing the multi-program transport stream of the program recorded on a recording medium.

Similar to claim 1, Applicant respectfully submits that claim 58, 62 and 67 would not have been rendered obvious in view of Saib and Yuen '359 because the cited references do not

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teach or suggest a recording and/or reproducing device with a digital interface for recording and/or reproducing the multi-program transport stream on/from a recording medium, as required by the claims.

Accordingly, Applicant respectfully submits that claims 58-67 should be allowable over Saib and Yuen '359 because the cited references do not teach or suggest all of the features of the claimed invention.

Independent Claim 68

Amended independent claim 68 recites “[a] digital audio/video (A/V) recording/reproducing device comprising: a receiver including a digital interface for receiving a multi-program transport stream and a program information control command transferred from a digital A/V device, and recording/reproducing program information of the multi-program transport stream corresponding to the program information control command.”

As discussed above, neither Saib nor Yuen '359 discloses a recording/reproducing device which receives and records a multi-program transport stream. Applicant respectfully submits that claim 68 should be allowable over Saib and Yuen '359 because the cited references do not teach or suggest all of the features of the claimed invention.

New Claims

By this Amendment, Applicant has added new dependent claims 69-81 in order to further define the claimed invention with regard to the receiver and the recording/reproducing device

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being linked via an IEEE 1394 serial bus cable for transferring the multi-program transport stream and the control command.¹ Applicant respectfully submits that the cited references do not teach or suggest this feature of the claimed invention.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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¹ See, for example, Fig. 2 and page 9, first full paragraph.